

Enterprise Systems: Relational Database Management Systems / Unix

Definition(s):

A relational database is a data structure perceived by its users as a collection of tables, organized and accessed according to relationships between data items. A relational database allows the definition of data structures, [integrity constraints](#), and storage and retrieval operations. In such a database, the data and relations between them are organized in [tables](#). A table is a collection of [records](#) and each record in a table contains the same [fields](#). Certain fields may be designated as [keys](#), which means that searches for specific values of that field will use indexing to speed access. Where fields in two different tables take values from the same set, a [join](#) operation can be performed to select related records in the two tables by matching values in those fields.

Rationale:

The overall objective of this standard is to facilitate the sharing of data (information), promote the profitability and scalability of database application programs, and improve transfer of skills within and among state agencies. The ability to access, analyze and transfer information quickly across a variety of networks and protocols is becoming increasingly important in today's government environment. The information system industry's traditional hierarchical, proprietary database products lack the necessary underlying technology to meet these new demands. Data in a relational database can be maintained and readily accessed through ANSI-standard Structured Query Language (SQL) calls. SQL is an industry standard for the data access tier of an application and for data access tools. In addition, there is a need to limit the product set for: economies-of-scale with respect to procurement, skills transferability required by a mobile workforce, data interchange between state government agencies, and to limit the skills requirements for a competency team development approach.

Approved Standards:

- [ANSI SQL-92](#)
- Supports [ODBC](#), [JDBC](#), [XML](#) and [OLE DB](#).
- Supports Distributed Relational Database Architecture (DRDA)
- Must support external authentication such as RACF and third party biometric devices

Approved Products:

IBM UDB

Guidelines/Technical Considerations:

Agencies are recommended to buy a database engine that will scale to application growth and hardware upgrades. The database applications should be portable as hardware or operating systems change. For instance, some databases will only work with a particular operating system. Databases require constant support. Staff will need to be allocated to maintain the database engine. The

Office of Information Technology Standard

development and use of desktop databases is discouraged because of the stated architectural direction to share data on common server platforms. Desktop database products, such as Microsoft Access, Lotus Approach, or Paradox, are considered end user database access tools and must not be used for agency or statewide implementation. In addition, relational databases that support spatial elements will become more important as the state integrates GIS related data into databases.

Review Cycle:

As needed.

Timeline:

Issued: February, 2003

Transition:

Transition to the approved database standard will occur over time. All new purchased or developed applications must support the database standard. As existing applications are replaced or major significant enhancements are undertaken, the replacement or enhanced application must support the database standard.

Procurement:

Pricing shall be based on the IBM Passport Advantage Price List, Level A and the Office of State Purchasing Contract # 405306. *The minimum percentage discount to be applied to the IBM Passport Advantage Price List, Level A is 40%.*

Agencies shall obtain the following documentation prior to purchase and keep this information on file for audit purposes:

- 1) the published IBM Passport Advantage Price List, Level A at time of purchase
- 2) the State's discounted actual cost

Date: _____

Approved by: _____